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firm and solid, 3-7 cm. long, 2.5-5 cm. thick; spores tileul-buff\* or pale pinkish buff\* in mass, ellipsoid, smooth,  $6-8 \times 4.5-5$  microns; cystidia none.

Collected on the ground in dry grassland at Tolland, Eldora, Sulphide, Nederland, Rollinsville, Plainview, Pine Glade, Pactolus, and Crescent, Colorado. Alt. 6,000-9,000 ft. June to September. Edible.

The plant is easily recognized by its size, firmness, and the habit of forming fairy rings.\* It is worthy of note that the spores from these specimens are not pure white in mass as stated in the original description.

PENNSYLVANIA STATE COLLEGE

## A NEW HYBRID CAREX FROM THE MIDDLE WESTERN STATES

BY IRA W. CLOKEY

While collecting specimens of *Carex impressa* (Wright) Mackenzie in Macon Co., Illinois, in 1915, a clump of a peculiar form of *Carex* was found. On investigation these plants were found to combine characteristics of both *Carex impressa* (Wright) Mackenzie and *Carex lanuginosa* Michx. Owing to this combination of characteristics and to the almost sterile condition of the plants the hybrid origin was indicated. The plants seemed to propagate entirely by numerous very tough rootstocks that were 4-6 inches under ground. Mr. K. K. Mackenzie kindly examined specimens and description of these plants and found them to be an exact match for three specimens from Indiana which he had described but never published. Mr. Mackenzie had reached the same conclusion as to the hybrid origin and had selected the same parents.

***Carex impressa* (Wright) Mackenzie  $\times$  *Carex lanuginosa* Michx.  
hyb. nov.**

Grows in small clumps from a stout rootstock; the fertile culms from 5-8 dm. tall, stout, erect, sharply angled, smooth or minutely rough on the angles above. Leaves 4-7 mm. wide, flat

\* Ridgway, Robert. Color standards and color nomenclature. 1912.

above, long acuminate, minutely rough above, slightly nodulose, those of the fertile culms shorter than the culm, those of the sterile culms much longer than the fertile culms. Lower sheaths overlapping, loose, reddish below, ventral band white or tawny, hyaline, easily ruptured, mouth brown. Terminal 2-4 spikes staminate, slender cylindric, sessile or nearly so, 1-5 cm. long, whitish or brownish, scales acute, hyaline. Pistillate spikes 2-3, cylindric, 1.5-6.5 cm. long, 7-10 mm. wide, the upper sessile or nearly so, the lowest short or long peduncled, the lowest rather loosely flowered, attenuate at base, all separated. Bracts of the staminate spikes inconspicuous and almost scalelike to shorter or (the lowest) longer than the spike. Bracts of the pistillate spikes leaflike, shorter or longer than the inflorescence. Perigynia brown, hairy, tough, somewhat inflated, faintly impressed nerved or nerves hidden by the pubescence, sessile, 4.5-5 mm. long, 2 mm. wide, slender ovoid with short bidentate beak, teeth erect or spreading, about  $\frac{1}{2}$  mm. long. Achene trigonous, obovoid, 1.75-2 mm. long, 1-1.25 mm. wide, smooth, dull, light brown; style uniform. Scales whitish hyaline or with brown margin and green midrib, cuspidate, usually shorter than the perigynia. Stigmas 3. Though the fertile culms are numerous, few achenes develop so that the plants are almost sterile.

The above description is based primarily on plants found growing in open damp alluvial soil at one locality in Macon Co., Illinois. My number 2338, preserved in my herbarium, is designated as the type. Duplicate specimens have been deposited in a number of the consulting and private herbaria of the country. At the type locality are found both parents, *Carex impressa* (Wright) Mackenzie and *Carex lanuginosa* Michx., *Carex stricta* Lam. var. *angustata* (Boott) Bailey, *Carex lupulina* Muhl. var. *pedunculata* Dewey, *Carex lupuliformis* Sartwell, *Carex crus-corvi* Shuttlw., *Carex stipata* Muhl., *Carex tribuloides* Wahlenb., *Carex tribuloides* Wahlenb. var. *turbata* Bailey, *Carex granularis* Muhl., and *Carex muskingumensis* Schwein.

The following key will serve to separate this hybrid from the parent species:

Perigynia pubescent.

Plants slender, leaves 2-5 mm. broad, heads less than 7 mm. thick, perigynia abruptly contracted to the short beak. *Carex lanuginosa* Michx.

Plants stout, leaves 4-7 mm. wide, heads 7-10 mm. thick, perigynia tapering gradually to the longer beak, faintly impressed nerved, almost sterile.

*Carex impressa*  $\times$  *C. lanuginosa*.

*Perigynia* glabrous.

*Carex impressa* (Wright) Mackenzie.

Specimens examined, all from the herbarium of Mr. K. K. Mackenzie.

INDIANA: Wells Co., C. C. Deam, May 22, 1908. Posey Co., C. C. Deam, May 23, 1911. Porter Co., C. C. Deam, June 17, 1911.

## A NEW FOSSIL SELAGINELLA FROM THE LOWER TERTIARY OF MONTANA\*

BY F. H. KNOWLTON

The remains of lycopodiaceous plants appear to be very rare in Mesozoic and later horizons, and when one is discovered that shows not only the foliar organs, but the fruiting organs as well in a high degree of perfection, it merits immediate description, and this is the warrant for the present publication.

The beautifully preserved specimens here described as *Selaginella* were obtained during the past summer (1915) by Mr. A. J. Collier, of the United States Geological Survey, in the northeast Montana coal field, at a point a few miles south of the international boundary, in sec. 33, T. 37 N., R. 47 E. The material in which they are preserved is a white, very fine-grained clay especially adapted to retaining even the most delicate plant structures. The plants in association with the *Selaginella* indicate that they probably grew in or very close to the body of water in which they were deposited. These comprise an alga, stems and roots of *Equisetum*, leaves and stems of coarse sedges, a fern (*Onoclea sensibilis fossilis*), a leaf apparently of *Potamogeton*, and a stem bearing whorls of leaves of what is known as *Trapa* ? *microphylla* Lesq. The latter specimen throws much light on the affinity of a plant that has long been imperfectly understood. It will be described and figured on a later occasion.

The *Selaginella* may be known as:

### *Selaginella Collieri* n. sp.

PLATE I, FIGURES 1-6

Stems very slender, weak, evidently erect or suberect, probably from a decumbent base, about 2 centimeters high, pinnate, the branches alternate, close, the lower one or two compound; leaves

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